

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024****Subject Code: 2170715****Date:22-05-2024****Subject Name: Data Mining and Business Intelligence****Time: 02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

- Q.1** (a) What is Business Intelligence (BI)? What is the role of data warehouse in achieving BI? **03**
- (b) How OLAP is different from OLTP? **04**
- (c) Discuss architecture of data warehouse with diagram. **07**

- Q.2** (a) What is data mart? How it differ from data warehouse? **03**
- (b) Explain star schema. **04**
- (c) What is data mining? Explain various techniques of data mining. **07**

OR

- (c) What are data cubes? How Drill-down, roll-up, slice and dice operation affects the data cubes? **07**

- Q.3** (a) Why market basket analysis is important? **03**
- (b) How data cleaning is performed? Explain with one example. **04**
- (c) List various data pre-processing tasks. Explain briefly any three tasks. **07**

OR

- Q.3** (a) Define support, confidence, and strong association. **03**
- (b) Discuss information gain and gini index. **04**
- (c) Discuss importance of dimension reduction and algorithms used for it. **07**

- Q.4** (a) Differentiate logistic and linear regression. **03**
- (b) How classification is differs from prediction? Explain phases of classification task. **04**
- (c) Using Apriori algorithm, find all frequent item sets for following transaction data. **07**

(Take min_sup=60% and min_conf=80%)

ID	Items
1	{M,O,N,K,E,Y}
2	{D,O,N,K,E,Y}
3	{M,A,K,E}
4	{M,U,C,K,Y}
5	{C,O,O,K,I,E}

OR

- Q.4** (a) Draw diagram of neural network with one i/p layer, 3 hidden layers and 1 o/p layer. Show bias and weights at proper place. **03**
- (b) Explain Bayesian learning and inference. **04**
- (c) Explain Apriori algorithm with the steps required to improve it. **07**
- Q.5** (a) Differentiate between classification and clustering. **03**

- (b) Explain role of business intelligence in any one business domain. **04**
Discuss how it helps in business growth.
- (c) Explain working of decision tree with suitable example. **07**

OR

- Q.5**
- (a) Which data mining technique is most suitable for fraud detection? **03**
Justify your answer.
 - (b) Discuss spatial mining and text mining in brief and list out their **04**
applications.
 - (c) Explain logistic regression with appropriate example. **07**
